

Invisible Connections: Investigating Older People's Emotions and Social Relations Around Objects

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ABSTRACT

The advent of the Internet of Things creates an interest in how people might interrelate through and with networks of internet enabled objects. With an emphasis on fostering social connection and physical activity among older people, this preliminary study investigated objects that people over the age of 65 years viewed as significant to them. We conducted contextual interviews in people's homes about their significant objects in order to understand the role of the objects in their lives, the extent to which they fostered emotional and social connections and physical activity, and how they might be augmented through internet connection.

Discussion of significant objects generated considerable emotion in the participants. We identified objects of comfort and routine, objects that exhibited status, those that fostered independence and connection, and those that symbolized relationships with loved ones. These findings lead us to consider implications for the design of interconnected objects.

Author Keywords

Ageing; Internet of Things; Social Relations; Objects; Socio-material relations; Tangible Interaction

ACM Classification Keywords

H.5.. Information interfaces and presentation (e.g., HCI):
H.5.3 Group and Organization Interfaces

INTRODUCTION

Applications for the Internet of Things (IoT) have been conceived of from an informational, machine-to-machine or monitoring perspective, with little regard to the people around the "things" (objects). Since people collect and interrelate around and with objects throughout their lives, we adopt a human-centred perspective to understand how objects

currently foster social relations and physical activity and we explore the implications of these socio-physical relations with regard to the design of new technology that promotes ongoing social interaction in older adults.

It is well documented that humans benefit from having ongoing social connections. Continued socialization decreases the likelihood of becoming depressed, which in turn reduces the impact on the health system [5]. With the ageing population forecast to increase to 25% of the population in the next 30+ years, it is important to investigate ways to facilitate and extend independent living and foster social engagement. The paper aims to understand how this may be better facilitated through networks of people and their objects.

OUR RELATIONS WITH THINGS

Csikszentmihalyi [6] suggests there are 3 key reasons why we need things (objects): they give us the illusion of power; they serve as an extension of the self and they give permanence to the meaningful relationships in our lives. He suggests that "most of the things we make these days do not make life better in any material sense but instead serve to stabilize and order the mind." (p. 22)

Theories of socio-material relations articulated in the Social Studies of Science, Suchman [17], Orlikowski [16], Latour [13] have demonstrated how objects and social relations are mutually constituted. Our houses, offices, coffee pots, guns etc. materialize the relations between us. We inhabit and use objects and they in turn shape our interactions and our agency as we shape theirs.

Tangible and Embodied Interaction research [e.g. 7] has recognized the importance of understanding our embodied interaction with the physical world of materials, objects and other beings. Early work in tangible interaction emphasized the possibility of coupling digital and physical representations [11], while later work recognized the interweaving of the material/physical and the social aspects of interaction from a design perspective [10]. Some design work in domestic settings such as the history tablecloth [8] and the magic box [18] have investigated interesting properties of internet enabled objects. However, research has largely been based on discrete tangible and embodied

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systems and has not examined multiple networked objects embedded in everyday lives. As a precursor to this study the “habituated objects” that support the habits and routines of an elderly person were investigated [4].

Leonardi et al., [15] considered the functional and emotional geography of older people’s homes and concluded that new technologies should fit this landscape. For example, safety-related technologies are more acceptable in the bathroom than the bedroom, which is seen as a more intimate and emotionally laden space. Other studies [1] [2] [9] support the notion that the domestic space is a complex, changing environment with multiple variables that need to be considered when designing technology to assist the patient/resident with their at home healthcare/ rehabilitation programs.

The significance of exploring our relationship with our objects in the domestic environment has also been highlighted in the context of home archiving [12]. Van den Hoven et al [19] examines the ways in which everyday memories might be captured, stored and retrieved through the use of digital media. However the memories being digitally recorded are not specifically associated with everyday objects used in everyday life.

In this paper we investigate the social and physical relations around objects that are regarded as significant by older people in Australia. Through broadening our understanding of these relations we consider the implications for the design of Internet of Things technology that promotes social and emotional connection for older people.

METHODOLOGY

We explored the role of objects and social relations in place through contextual interviews [3] in the homes of 6 older Australians. The participants were over 65 years old and consisted of 4 men and 2 women from diverse backgrounds and life experience. They had lived in their respective homes from 2 up to nearly 40 years.

The participants were contacted by telephone to confirm their willingness to participate and were asked, at this time, to consider what might be their significant objects. This provided them the opportunity to think about their response ahead of the interview. “Significant” was framed as being really useful, provides pleasure or has sentimental value.

The interviews were audio recorded and the objects were photographed in place. Where permissible the objects were also video recorded. The original intention was to have the participant video the objects so that they could have control over what was recorded. This also meant that the participant would be behind the camera (not in front) thus protecting their identity and respecting their privacy. However, in practice, it would have been insensitive to ask this of them due to physical limitations of the different individuals and/or their home environment. One participant had recently undergone surgery, another used a walking frame, another lived in studio type accommodation and another was

protective of her domain and didn’t want to be the subject of a “show and tell” scenario.

Interviews were loosely structured and were steered by the thread of conversation and the items within the home. Nevertheless, a rough plan of questioning was devised in order to try to understand the significance of chosen objects and the way in which they supported social relations and physical activity.

The conversation started by looking at the physicality of the object; its purpose, positioning and the reason behind its significance. We explored whether the object connected them in any way to another person (past or present) and inquired about their personal relationship with the object and whether or not it currently promoted social or physical interaction. We also collected some general details about their current communication habits and use of technology.

FINDINGS

The interviews commenced in areas of the home open to visitors, usually the kitchen table or living room. However, as the participants relaxed into the interview and it was suggested we take a closer look at a specific object ‘in place’ they were happy to move around their homes and as we went more objects came to mind.

Some of the most revealing aspects of the contextual interviews were points where people clearly became emotional, preferred to gloss over or avoid discussion, indicated that they really preferred not to have photos or video taken, or where they declined to participate in workshops that would follow on. What was surprising and valuable about conducting interviews about significant objects in the context of the home was the insight into the emotions and privacy concerns that are revealed when the participants discuss their belongings.

In most cases there wasn’t anything in particular that they didn’t like about their homes. However, in one case, the dishwasher was mentioned; it was no longer in the home but was still openly disliked showing that there were also emotions attached to the memory of objects that were no longer there. Whilst the types of objects that were highlighted as being significant were varied, themes around what the objects mean to its owner emerged. The themes are not mutually exclusive. Examples are given below:

Objects of Independence: The car, the shoe horn, the laundry basket on wheels

One participant had quite practical significant objects that included a shoe horn, a set of steps, a handy vac and a miniature screwdriver. The connection he has with them was demonstrated through his enthusiasm. The shoe horn not only promotes physical activity by enabling him to put on his shoes without bending over, it also fosters social connection with his grandchildren through its use as a walking stick and a sword in their role play. His expression of disappointment at the thought of something happening to it and the fact that it

also accompanies them on holiday further reinforced evidence of this emotional attachment.

Another participant described the importance of her car for supporting her independence. It not only represents a link to social connections like going to her weekly choir practice and minding her grandchildren but also facilitates the mundane routine physical activities like grocery shopping and attending doctors' appointments. When she talked about the cars she has had in the past she did so with pride and passion. However, the emotion tied up in the object parked in her carport at this stage of her life was sadness. Her current health situation does not permit her to drive and her dependence on others for transportation leaves her feeling really inadequate.

Objects of routine and comfort: The coloured bowls, the coffee filter, the tea-pots and the kettles.

Some participants identified objects that supported their daily routines such as at mealtimes and making tea. One conversation with a couple (who preferred not to be photographed) was held around the kitchen table. As the interview progressed it became apparent this was the neutral shared area in their home. He had prepared the objects he wished to discuss next and they were 3 different coloured bowls. The participant said playfully, "Would it be known or unbeknownst to other people" (he nods at his partner) he uses "the yellow one for cereal, the green one for salad and the other one for hot food". "Oh, well, now I know!" an admission from the partner of twenty years.

It was interesting to discover that little idiosyncrasies of daily habits and attachments to objects are not always known to family members, regardless of the length of time they had shared together. Discoveries of this nature through conducting interviews in context provide valuable insight into the relationships people have with each other, their shared spaces and their shared objects.

Here, privacy is an important consideration for the design process but so too is an understanding of the desire for playful secrecy in the partnership.

Objects of tradition, status and prestige: The Merc, the ipad, the collectors' items

Some objects clearly symbolized tradition, status or prestige. The car in this instance was more than just a method of getting around. The participant recalled a trip to Tasmania with the Mercedes Benz Club, only at that particular time he owned a Volvo. He laughed as he recalled that his car was the only one on the ferry that wasn't a Merc. The emotional connection he has with the object extends much further than the object itself.

In other situations it wasn't the object itself but how it was positioned that promoted social interaction; conversation pieces like a 'grey nomads' camping book and collectors items laid out on the coffee table and pictures or clocks on

the wall. These objects connect people with others and to particular times in their lives.

In some instances the story attached to the object is what adds to its significance and this might easily be lost if the inheritor does not value or share the story. One man spoke about a remnant piece of furniture from the 1974 flood that was cherished because it survived.

Objects symbolizing relationships with loved ones: The Tiki, Toucan

On another occasion it was the words that weren't spoken that indicated the depth of emotion associated with the objects. One man, who lived alone with very few belongings, selected two ornaments as being significant; a "Tiki" (a Polynesian and Maori wooden carving of humanoid form) and a "Toucan" bird. The man described how they symbolize his daughter and granddaughter and as such he feels a connection to them through the objects in an emotionally safe, structured way. He indicated that he wants more contact with his daughter and is open to the possibility that through internet technologies the objects might allow him some form of connection with his daughter that may be asymmetric in nature. This indicates considerable scope and a framing for a personal and intimate design (provided the desire for connection is reciprocated) in relationships that may harbor both the desire for connection but also guardedness about connection due to the history of the relationship.

Objects for creativity or relaxation: a piano, a stereo/entertainment system

Some participants freely expressed joy and enthusiasm as they explained what their chosen objects meant to them. The stereo was not simply a device on which to play music but a reminder of the speech he gave at his daughter's wedding. Through the discussion the object was identified as being key to facilitating dancing, laughter and social connection at family get-togethers.

DISCUSSION:

Our investigation found that whilst the majority of the objects expressed as being significant are not currently explicitly associated with communication (excepting mobiles, ipads etc.) many of them are routinely used in social interaction and others facilitate physical activity. Others harbor significant memories.

During the process of finding out more about the objects deep emotion was revealed. People have strong emotional attachments to their things. They use objects in their routines and through their use, however mundane, they are wrapped into life-stories and become intertwined and connected in the intricacy of their owners lives. It is undoubtedly possible to add interactive capabilities to many objects through the Internet of Things and participants indicated they saw possibilities for networked objects to facilitate

communication. However design of such technology needs to be framed by an understanding of:

- The underlying emotions that are attached to and the social relations that are facilitated by objects;
- The kind of communications desired (if any and with whom) and how this might be best facilitated by objects;
- How memories associated with objects might be enhanced with technology;
- The need to respect privacy, safety and trust; and
- The circumstances in which objects might be better left alone and not networked so as not to interfere with memories and relationships.

A practical consideration is people's concerns about what happens to all of their objects when they die. There is the desire to pass on the knowledge and memories but apprehension that objects will be a burden that no-one would find interesting. However, in many instances, knowing the history of an object adds to its significance.

CONCLUSION

In this paper we aimed to provide insight into some of the issues that need to be considered when designing technology that promotes social interaction for older adults. Through conducting contextual interviews in a small sample of older adults we were able to observe the types of objects they consider significant and gain valuable insight into the emotional attachment they have with them. What is clear from the investigation is that objects that satisfy emotional needs are diverse and idiosyncratic presenting a challenge for design. As a first step it might be worth designing enhancement of specific objects for specific relationships and individuals rather than attempting to design more generic networked communicative objects. People have strong emotional attachment to the objects in their home environment and that ultimately needs to be respected in the design process.

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